

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (currently amended) A plant comprising:
an absorber that ~~is configured to remove~~ ~~removes~~ an acid gas from a feed gas, ~~wherein the absorber is further configured to receive~~ ~~receiving~~ a lean solvent and a semi-lean solvent ~~and to produce a, thereby producing~~ a semi-rich solvent and a rich solvent;
a first regenerator ~~fluidly coupled to the absorber and configured to receive that receives~~ a first portion of the rich solvent ~~and further configured to produce, thereby producing~~ the lean solvent ~~that is fed to the absorber~~ and a first regenerator overhead;
a second regenerator ~~fluidly coupled to the absorber and configured to receive that receives~~ a second portion of the rich solvent ~~and further configured to produce, thereby producing~~ the semi-lean solvent ~~that is fed to the absorber~~ and a second regenerator overhead;
~~a heat exchanger operationally coupled to the absorber and configured to preheat wherein~~ the second portion of the rich solvent ~~is preheated in a heat exchanger against the lean solvent from the first regenerator; and~~
wherein ~~the first and second regenerators are configured such that~~ the second regenerator overhead and the semi-lean solvent that is fed to the absorber are substantially exclusively produced from the second portion of the rich solvent.
2. (canceled)
3. (currently amended) The plant of claim 1 wherein the second regenerator ~~is further configured to receive~~ ~~receives~~ steam from a component in the plant.
4. (original) The plant of claim 3 wherein the component is a steam reboiler of the first regenerator and wherein the steam is a flashed steam condensate from the steam reboiler.
5. (currently amended) The plant of claim 1 wherein the absorber ~~is configured to operate~~ ~~operates~~ at a pressure that is lower than an operating pressure of the first regenerator and an operating pressure of the second regenerator.
6. (original) The plant of claim 5 wherein the feed gas comprises flue gas at a pressure of no more than 30 psia.
7. (original) The plant of claim 6 wherein the acid gas in the feed gas is carbon dioxide and has a concentration of between 0.25% (vol.) and 30% (vol.) and wherein the feed gas further comprises oxygen at a concentration of between 0.25% (vol.) and 20% (vol.).
8. (currently amended) The plant of claim 1 wherein the absorber is coupled to an intercooler that ~~is configured to receive and cool receives and cools~~ at least a portion of the semi-rich solvent to ~~thereby form~~ a cooled semi-rich solvent ~~that is re-introduced into the absorber.~~

9. (currently amended) The plant of claim 8 further comprising fluid conduits that are configured to allow mixing of wherein at least a portion of the semi-lean solvent is mixed with the semi-rich solvent to thereby form a mixed solvent, and wherein the intercooler is configured to cool ~~cools~~ the mixed solvent to form a cooled mixed solvent suitable for introduction ~~that is fed~~ into the absorber.
10. (currently amended) The plant of claim 1 wherein the absorber is coupled to an intercooler that is configured to receive and cool ~~receives and cools~~ at least a portion of the semi-lean solvent to thereby form a cooled semi-lean solvent suitable for introduction ~~that is fed~~ into the absorber.
11. (currently amended) The plant of claim 1, optionally comprising an intercooler that is operationally coupled to the absorber, and wherein a power plant or reforming plant is operationally coupled to the plant, and wherein the power plant or reforming plant is configured to provide ~~provides~~ (a) energy for a reboiler of the first regenerator, and (b) the absorber feed gas that is fed into the absorber, and (c) optionally wherein a heat recovery unit that employs duct firing is configured to provide ~~the energy is optionally provided by a heat recovery unit that employs duct firing.~~
12. (currently amended) The plant of claim 11 further comprising at least one of a lean solvent cooler, a semi-lean solvent cooler, and a regenerator condenser, each configured to allow providing ~~and wherein heat is provided to the power plant by at least one of the lean solvent cooler, the semi-lean solvent cooler, the regenerator condenser, and the intercooler.~~
13. (currently amended) The plant of claim 1, optionally comprising an intercooler that is operationally coupled to the absorber, further comprising at least one of a lean solvent cooler, a semi-lean solvent cooler, and a regenerator condenser, wherein a power plant is operationally coupled to the plant and wherein the power plant is configured to allow providing of , and wherein heat is provided to the power plant by at least one of the lean solvent cooler, the semi-lean solvent cooler, the regenerator condenser, and the intercooler.
14. (currently amended) A plant comprising: in which
an absorber that is configured to remove ~~removes~~ an acid gas from a low-pressure flue gas and further configured to receive ~~receiving~~ a lean solvent and a semi-lean solvent,
a first regenerator configured to operate at a first pressure and to produce ~~wherein the lean solvent is produced by a first regenerator operating at a first pressure,~~
a second regenerator configured to operate at a second pressure and to produce the semi- ~~lean solvent is produced by a second regenerator operating at a second pressure,~~
wherein the absorber is further configured such that the lean solvent and the semi-lean solvent are fed to the absorber, and such that wherein each of the first and second pressures are greater than a pressure of the low-pressure flue gas.
15. (currently amended) The plant of claim 14 wherein the first and second regenerators are configured to receive a first and second portion of a rich solvent, respectively, and

wherein the absorber is further configured to produce ~~wherein the rich solvent-is produced by the absorber.~~

16. (currently amended) The plant of claim 15 wherein the second portion of the rich solvent is heated by the lean solvent of the first regenerator before the second portion of the rich solvent enters the second regenerator.
17. (currently amended) The plant of claim 14 wherein the second regenerator is further configured to receive receives steam flashed from condensate of produced by a steam reboiler of the first regenerator.
18. (currently amended) The plant of claim 14 wherein the absorber is coupled to an intercooler, and wherein the intercooler is configured to cool ~~cools~~ at least one of a semi-rich solvent produced by the absorber and the semi-lean solvent produced by the second regenerator.
19. (original) The plant of claim 14 wherein the low pressure flue gas comprises no more than 30 %(vol.) carbon dioxide and less than 20 %(vol.) oxygen, and wherein the low pressure flue gas has a pressure of no more than 30 psia.
20. (currently amended) The plant of claim 14, optionally comprising an intercooler that is operationally coupled to the absorber, wherein a power plant or reforming plant is operationally coupled to the plant, and wherein the power plant is configured to provide provides (a) heat for a reboiler of the first regenerator, and ~~(b)-the absorber feed gas that is fed into the absorber,~~ and wherein the power plant or reforming plant is further configured to optionally receive ~~receives~~ heat from the plant by at least one of a lean solvent cooler, a semi-lean solvent cooler, a regenerator condenser of the plant, and the intercooler.